

Title (en)
PROCESS AND APPARATUS FOR MULTISTAGE THERMAL TREATMENT OF RUBBER WASTE, IN PARTICULAR SCRAP TIRES

Title (de)
VERFAHREN UND VORRICHTUNG FÜR MEHRSTUFIGE WÄRMEBEHANDLUNG VON GUMMIABFÄLLEN, IM BESONDEREN ALTREIFEN

Title (fr)
PROCÉDÉ ET APPAREIL POUR LE TRAITEMENT THERMIQUE EN PLUSIEURS ÉTAPES DE REBUTS DE CAOUTCHOUC, EN PARTICULIER DE PNEUS USÉS

Publication
EP 2480633 B1 20170621 (EN)

Application
EP 09744092 A 20090925

Priority
EP 2009062474 W 20090925

Abstract (en)
[origin: WO2011035812A1] A process for multistage thermal treatment of rubber waste, in particular scrap tires, is proposed. The process comprises several steps of transferring a product granulate of rubber waste into three different sequencing heating zones of a reactor (10). In the heating zones (11a, 11 b, 11c) the product granulate is heated at a first temperature between 100° to 200°C, preferably 150° to 180°C, then at a second temperature between 200° to 350°C and at a third temperature between 300° to 600°C. The temperature is maintained until such time that no further oil is emitted within the respective heating zone. As a final step, the product granulate is removed from the reactor (10) and the desirable solid materials are separated.

IPC 8 full level
C09C 1/48 (2006.01); **C10B 7/10** (2006.01); **C10B 47/44** (2006.01); **C10B 53/07** (2006.01); **C10G 1/10** (2006.01)

CPC (source: EP KR US)
B08B 9/04 (2013.01 - US); **B08B 9/0436** (2013.01 - US); **B08B 9/047** (2013.01 - US); **B08B 9/051** (2013.01 - US); **B82Y 30/00** (2013.01 - EP US); **C09C 1/482** (2013.01 - EP US); **C10B 7/10** (2013.01 - EP US); **C10B 47/44** (2013.01 - EP US); **C10B 53/07** (2013.01 - EP KR US); **C10G 1/10** (2013.01 - EP KR US); **C01P 2004/64** (2013.01 - EP US); **C01P 2006/80** (2013.01 - EP US); **Y02P 20/143** (2015.11 - EP US)

Citation (examination)
US 4452154 A 19840605 - KONO HIROSHI [JP], et al

Cited by
US11807813B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)
WO 2011035812 A1 20110331; BR 112012007405 A2 20160816; BR 112012007405 B1 20180320; CA 2774881 A1 20110331; CA 2774881 C 20170404; CN 102791832 A 20121121; CN 102791832 B 20140709; EP 2480633 A1 20120801; EP 2480633 B1 20170621; IN 3402DEN2012 A 20151023; JP 2013506014 A 20130221; JP 5755652 B2 20150729; KR 101734311 B1 20170511; KR 20120125979 A 20121119; PL 2480633 T3 20180228; RU 2012116053 A 20131110; RU 2507237 C2 20140220; UA 103706 C2 20131111; US 10184081 B2 20190122; US 2013064754 A1 20130314; US 2014374234 A1 20141225; US 8865112 B2 20141021

DOCDB simple family (application)
EP 2009062474 W 20090925; BR 112012007405 A 20090925; CA 2774881 A 20090925; CN 200980162612 A 20090925; EP 09744092 A 20090925; IN 3402DEN2012 A 20120419; JP 2012530134 A 20090925; KR 20127010360 A 20090925; PL 09744092 T 20090925; RU 2012116053 A 20090925; UA A201204904 A 20090925; US 200913498032 A 20090925; US 201414480225 A 20140908